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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/735,999

12/14/2000

Khiem Le

017.38689X00

6439

7590

05/06/2004

ANTONELLI, TERRY, STOUT & KRAUS, LLP
SUITE 1800
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ARLINGTON, VA 22209

EXAMINER

SHEW, JOHN

ART UNIT

PAPER NUMBER

2664

6

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/735,999

Applicant(s)

LE ET AL.

Examiner

John L. Shew

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because FIG 5 descriptor for SCHEDULER is "18", it should be "118". Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sethuram et al.

Claim 1, Sethuram teaches a method for scheduling data packets (ABSTRACT lines 1-3) referenced by a method for scheduling ATM cells, comprising segmenting each data packet into data segments (FIG. 9, column 10 lines 13-17) referenced by segmenter 906, assigning a slack value to each data segment of a packet (FIG. 7F, column 9 lines 2-6) referenced by equating slack value to Cell Delay Variation Tolerance, where the slack value is a function of a deadline of the packet and an estimated transmission time of the packet (FIG. 7F, column 9 lines 17-31) referenced by CDVT used to calculate Expiration Time 735 and Maturation Time 723 calculated from the Allowed Cell Period based on cell transmission rate, scheduling data segments for transmission (FIG. 9) referenced by Scheduler 904, based on slack values of data segments (FIG. 7A, column 9 lines 2-16, column 10 lines 46-48) referenced by CDVT and scheduling ATM cells based on VC Time Tables 703 which are linked to VC parameter tables 705.

Claim 2, Sethuram teaches decreasing the slack value of a segment (column 11 lines 48-67, column 12 lines 1-14) referenced by the adjustment to the VC parameter table based on the network feedback for Allowed Cell Rate. The reduction in ACR leads to a Rate Decrease Factor affecting VC parameter table recalculations determining the CDVT. Such decrease in slack value is performed if a transmission opportunity is missed (column 11 lines 32-47) referenced by the periodic transmission of a Rate

Management cell to determine the available cell rate over the network, thereby adjusting the VC parameter table as ATM cells are transmitted and transmission opportunities are missed.

Claim 3, Sethuram teaches slack value is measured in terms of amount of transmission opportunities that can be missed (column 11, 42-45) referenced that the periodicity of an RM cell which determined the Allowed Cell Rate for calculating the CDVT is transmitted at the ratio of 1 to 32 ATM transmissions.

Claim 5, Sethuram teaches a transmission apparatus (FIG. 9) referenced by Universal Test & Operations Physical Interfaces for ATM 912 and 914, comprising a plurality of data streams (FIG. 3) referenced by Video 301, Data 302, Audio 303, a transmitter connected to plurality of data streams (FIG. 9) referenced by UTOPIA 912, a scheduler for determining which data stream will be serviced (FIG. 9) referenced by Scheduler 904, said scheduler selecting a data stream based on slack value wherein the slack value is a function of deadline and estimated transmission time (FIG. 7F, column 9 lines 10-31) referenced by Cell Delay Variation Tolerance for slack value which is calculated from Allowed Cell Rate for transmission time and a resulting Expiration Time for deadline.

Claim 6, Sethuram teaches segmenting data streams into data segments (FIG. 9) referenced by Segmenter 906.

Claim 7, Sethuram teaches decreasing the slack value of a segment (column 11 lines 48-67, column 12 lines 1-14) referenced by the adjustment to the VC parameter table based on the network feedback for Allowed Cell Rate. The reduction in ACR leads to a Rate Decrease Factor affecting VC parameter table recalculations determining the CDVT. Such decrease in slack value is performed if a transmission opportunity is missed (column 11 lines 32-47) referenced by the periodic transmission of a Rate Management cell to determine the available cell rate over the network, thereby adjusting the VC parameter table as ATM cells are transmitted and transmission opportunities are missed.

Claim 8, Sethuram teaches a slack value assigner for assigning slack values to data segments (column 9 lines 2-5, 10-25) referenced by the assignment of CDVT to VC Parameter Table per active connection.

Claim 9, Sethuram teaches connecting a transmitter to a plurality of data streams for transmission (FIG. 9, FIG. 3) referenced by Universal Test & Operations Physical Interfaces for ATM 912 transmitting different data streams V 301, D 302, A 303, assigning slack values to data in said streams (column 9 lines 2-5, lines 10-14) referenced by Cell Delay Variation Tolerance for slack value within VC Parameter Table for each active connection, said slack value being a function of a deadline and estimated transmission time (FIG. 7F, column 9 lines 10-31) referenced by CDVT which

is calculated from Allowed Cell Rate for transmission time and a resulting Expiration Time for deadline scheduling data streams for transmission (FIG. 9) referenced by Scheduler 904, scheduling determined by slack values (column 13 lines 18-31) referenced by use of VC Parameter Table in scheduling determination.

Claim 10, Sethuram teaches data streams are segmented into data segments (FIG. 9) referenced by Segmenter 906.

Claim 11, Sethuram teaches slack values are assigned to data segment (column 9 lines 2-5,10-25) referenced by the assignment of CDVT to VC Parameter Table per active connection.

Claim 12, Sethuram teaches slack value is decreased for every transmission opportunity missed (column 11 lines 32-47) referenced by the periodic transmission of a Rate Management cell to determine the available cell rate over the network, thereby adjusting the VC parameter table as ATM cells are transmitted and transmission opportunities are missed.

Claim Rejections - 35 USC § 103

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sethuram et al.

as applied to claims 1-3, 5-12 above, in view of Kerr et al. Sethuram teaches a cell scheduler and flow controller. Sethuram teaches looking ahead to locate packets which will exceed requirements (column 9 lines 17-31) referenced by calculation of the requirement Expiration Time based on CDVT which is based on Allowed Cell Rate. Such calculation is inherently looking ahead since the expiration time is in the future to be used for packet determination. Sethuram does not teach deletion of such packet which exceed requirements where the requirement is equated to expiration time. Kerr teaches the deletion of flow cache entries which are expired (column 6 lines 11-27) referenced by the routing device expiring and deleting the flow cache entries. It would have been obvious to one of ordinary skill in the art at the time the invention was made to delete packet entries which have expired as taught by Kerr, with the cell scheduler of Sethuram for the purpose of reducing packet processing.

Citation of Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patent 6724721, Cheriton discloses a method of limiting the flow rate of non-adaptive aggressive flows. Patent 6477180, Aggarwal discloses a method of optimizing digital content in a multicast network. Patent 6728365, Li discloses a method for providing quality of service on packet based wireless connections.

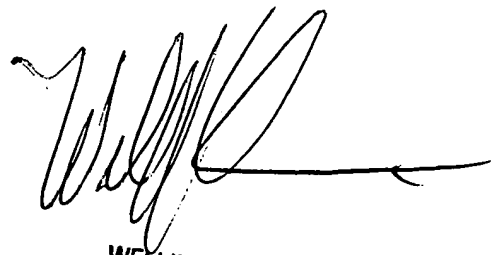
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L Shew whose telephone number is 703-305-8708. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'W. Chin', with a long horizontal stroke extending to the right.

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600